

Module: Introduction to Macromolecular Chemistry			
University/Department/Institute: Freie Universität Berlin/Department of Biology, Chemistry, Pharmacy/Institute of Chemistry and Biochemistry			
Module supervisors: Lecturers of the module			
Entrance Requirements: none			
Goals of Qualification: Students have acquired the basics of macromolecular chemistry and its terminology and know the most important polymer classes and their characteristics and fields of application. They know several polymerization methods as well as the reaction methods they are based on. They are aware of applications and limitations of relevant methods for the characterization of polymers.			
Contents: Characterization of polymers concerning their molecular weight, synthetic method, chemical structure, polymer architecture, characterization of polymerization reactions (step-growth, chain-growth, polyaddition, polycondensation) and their kinetics, polymer classes and their chemical structures, characteristics and applications (polyester, polyamide, polycarbonate, polyurethane, polyolefin, polyether, co-polymers, bio-polymers) and production processes, (poly-condensation, anionic, cationic, radical polymerization, poly-insertion, bulk-, solution-, emulsion- and suspension polymerization, polymer analog reactions)			
Teaching methods	Hours of attendance (Hours per week)	Forms of active participation	Workload (hours)
Lecture	40 hours	-	Presence (L) 40 Pre-, post-preparation (L) 30 Presence (T) 20
Tutorial	20 hours	Contributions to topic related discussions	Pre-, post-preparation (T) 30 Exam preparation and examination 30
Language offer of lecture		English	
Compulsory regular attendance		Attendance is recommended	
Workload (total)		150 hours	5 CP
Length of module		3 weeks	
Examination		Exam (120 minutes); The exam can also be conducted electronically	
Lecture is offered		Every winter semester (in the first part of the winter term)	
Applicability		Bachelor study program Chemistry, Bachelor study program Biochemistry, Master study program Chemistry Master study program Polymer Science	